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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,172	09/24/2003	I-Kai Pan	PANI3003/EM	4035
23364	7590	06/19/2006		
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			EXAMINER PRITCHETT, JOSHUA L	
			ART UNIT 2872	PAPER NUMBER

DATE MAILED: 06/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/668,172

Applicant(s)

PAN ET AL.

Examiner

Joshua L. Pritchett

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2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/24/06 & 8/16/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to Request for Continued Examination and Amendment filed March 24, 2006. Claim 5 has been amended as requested by applicant.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drain (US 2003/0206256) in view of Wang (US 2002/0041441) and Takahashi (US 4,729,631).

Regarding claims 1, 3 and 5, Drain et al. disclose in figs. 7 and 8 a composite micro-structured sheet for diffusing and condensing light comprising a substrate (16) having a top surface and a bottom surface (figs. 7 and 8), wherein a plurality of straight trenches (76) is formed on the bottom surface for diffusing the incident light on the bottom surface, and a plurality of triangular-type protrusions (64) is formed on the top surface for raising the semi-brightness angle of the light that has passed through the bottom surface (page 3, para. 0038).

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Drain et al. further disclose on page 4, section (0057) that many different shapes can be used for the trenches/protrusions but does not explicitly state wherein the plurality of straight trenches has an arc cross-section, wherein' each straight trench with an arc cross-section is constructed of a concave pillar lens array; and wherein the size and focal length of the lenses of the concave pillar lens array are all the same. Wang teaches in figures 1-3, conventional shapes for microstructure straight trenches, including a plurality of straight trenches with an arc cross-section (Fig. 3); wherein each straight trench with an arc cross-section is constructed of a concave pillar lens array (Fig. 3); and wherein the size and focal length of the lenses of the concave pillar lens array are all the same (Fig. 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the straight trenches of Drain et al. have an arc cross-section and be constructed of a concave pillar lens array as suggested by Wang to provide different light directing characteristics for different brightness enhancement. Further, while Wang may suggest in figs. 13A and 13B an included angle of the trench/protrusions, neither Drain et al. nor Wang explicitly state wherein an included angle between each straight trench with an arc cross-section and the respective triangle-type protrusion ranges from 30 to 90 degrees. Takahashi et al. teaches in figs. 10-12, different composite micro-structured sheet for diffusing with trenches and triangle-type protrusions wherein an included angle between each straight trench and the respective triangle-type protrusion ranges from 30 to 90 degrees (90 degrees, figs. 10-12). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the sheet of Drain in view of Wang as set forth above also have an included angle as suggested by Takahashi et al. to obtain better horizontal diffusing characteristics (Takahashi, column 7, line 3).

Regarding claims 2, Drain et al. further disclose wherein the substrate is made of polymethyl methacrylate IPMMAI or polycarbonate (PC) (page 4, section (00502, line 7).

Regarding claims 7, Drain et al. further disclose wherein the triangle-type protrusions are parallel to each other (see fig. 5).

Regarding claims 9, Drain et al. in view of Wang and Takahashi et al. as set forth above disclose the claimed invention except wherein the included angle is 30 degrees. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the included angle be 30 degrees, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. One would have been motivated to make the included angle be 30 degrees for the purpose of providing specific light directing characteristics for specific brightness enhancement. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) See also In re Boesch, 61 7 F.2d 272, 205 USPQ 21.5 (CCPA 1980).

Response to Arguments

Applicant's arguments filed March 24, 2006 have been fully considered but they are not persuasive.

Applicant argues that the Drain reference cannot diffuse light. The Drain invention includes all the structural limitations of the claim language and therefore would be able to perform any of the functional limitations of the claim language. Further Drain reference states that it may include diffusion (para. 0064). Applicant also points out a difference between the

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light source of Drain and the current application. The type of light source used is not present in the claim limitations therefore this argument is moot.

Applicant argues that Wang requires different microstructures. Fig. 3 shows an embodiment of Wang with only one kind of microstructure. Further this limitation is not present in the independent claim.

Applicant argues that there is no motivation to combine the references absent improper hindsight. As stated in the rejection above the Drain reference suggest the use of different shapes (para. 0057) and the Wang reference teaches a different shape that could be used. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicant argues that the Takahashi reference is used in a rear projection apparatus and not an LCD display. The claim language does not require the sheet used in an LCD display, therefore this argument is moot.

Conclusion

This is a Request for Continued Examination of applicant's earlier Application No. 10/668,172. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L. Pritchett whose telephone number is 571-272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JLP *JLP*



DREW A. DUNN
SUPERVISORY PATENT EXAMINER